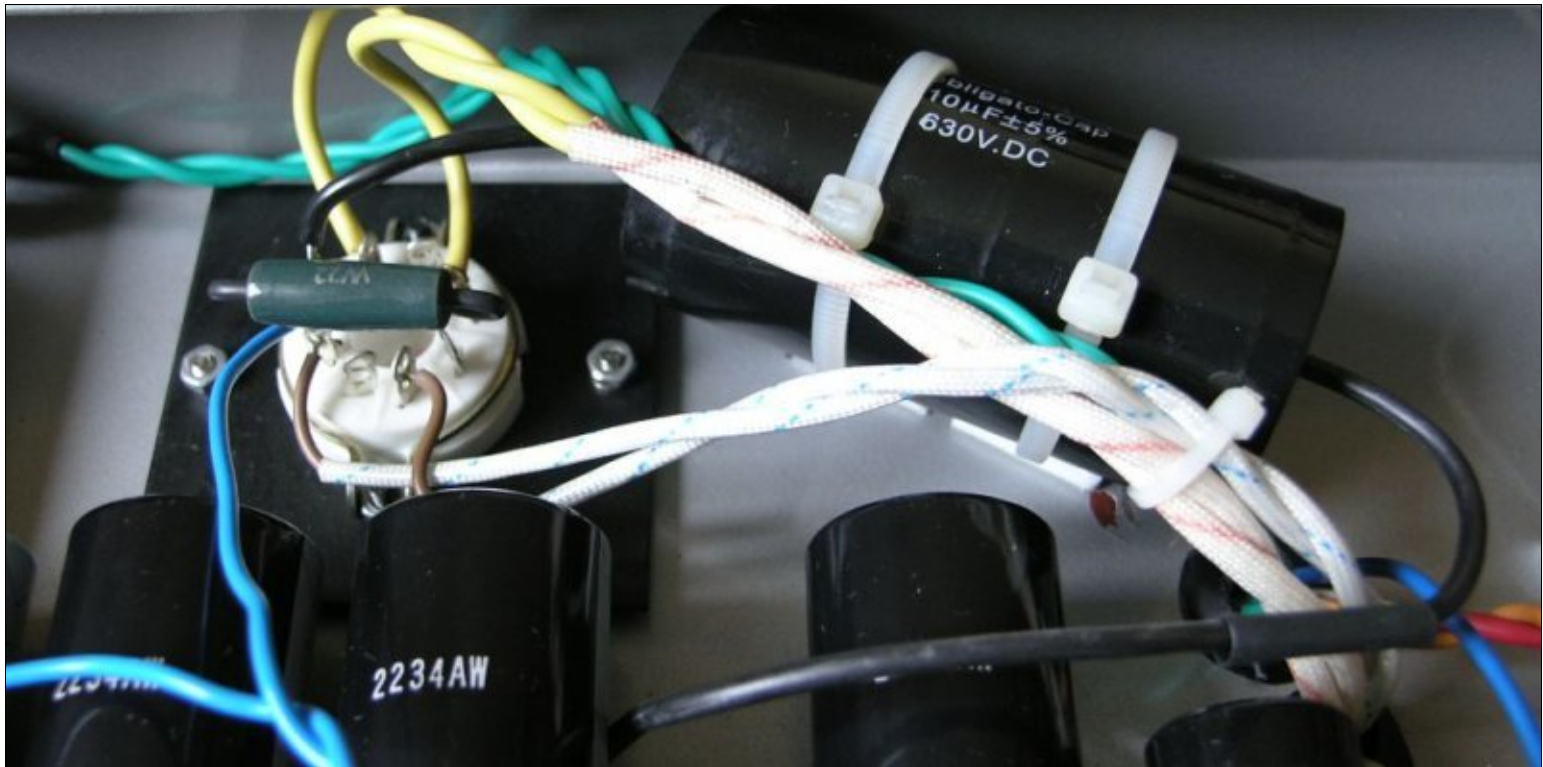


## Billie to Ladyday WE91 PSU Upgrade

The standard Billie circuit uses two 220uF capacitors in series after the tube rectifier and before the power supply choke. This gives an effective first capacitor of 110uF. This is very high capacitance for any tube rectifier and so the tube must be protected with a resistor before these caps. The Billie uses a 82R wirewound directly after the rectifier and before the first capacitor(s). Most tube rectifiers specify a requirement of a low value first capacitor, between 6uF and 10uF. The newer Ladyday with the WE91 upgrade pack uses such a small value film foil first capacitor for quality. These are much better sounding than electrolytics and so this is an easy upgrade for the Billie and older Ladyday owner to do.



If you look at the circuit below you can see that a small value film capacitor now follows the resistor R7 after the tube rectifier. R7 in the original Billie circuit is the 82R wirewound. The two 220uF capacitors that were previously on the rectifier side of the choke have been moved over to the exit side of the choke and so are now connected with the other pair of 220uF's. This now gives the rectifier an 'easier time' especially on startup. The plan was to try out a pair of TJ 274b rectifier tubes but I wanted to make sure that the circuit would not put any undue stress on any such tube at startup and so extend the life. This upgrade does bring in yet more sonic gains, notably a little more detail and attack.

